

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant (s): Paparatto et al.

Serial No.: 09/627,306

Group Art Unit: 1625

Filed: July 27, 2000

Examiner: Ba K. Trinh

For: PROCESS FOR THE PREPARATION OF OLEFIN OXIDES

#10

CERTIFICATION OF FACSIMILE TRANSMISSION
I HEREBY CERTIFY THAT THIS PAPER IS BEING FACSIMILE TRANSMITTED TO THE U.S. PATENT AND TRADEMARK OFFICE ON THE DATE SHOWN BELOW:
February 25, 2002
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<i>Stephanie S. Potts</i>
SIGNATURE OF PERSON SIGNING CERTIFICATE
<i>February 25, 2002</i>
DATE OF SIGNATURE

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

RESPONSE

This letter is filed in response to the official letter dated 25 September 2001 to which a response is due by 25 February 2002 to be within 2 months extension of the shortened statutory period. A petition for a 2 month extension of time accompanies this response.

The Examiner has objected to claims 1 to 24 as being obvious over JP11-309378 and US-A-6037484 to Grey. The Applicant respectfully contests this position for the following reasons:

This invention relates to a process for the preparation of olefin oxides. In particular, the process relates to the preparation of olefin oxides by the direct epoxidation of an olefin using hydrogen peroxide or a pre cursor in the presence of a zeolite catalyst containing titanium atoms and an amine or amide base of a specified formula. In other words the titanium atoms and amine or amide are part of the catalyst system. Furthermore, the amines or amides of the present invention have

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By: *cg*

alkyl substituents as can be seen from the definitions of R, R1 and R2, as seen in the claims.

The Japanese document was published on 9th November 1999, whereas the present application has a priority date of 27th July 1999. Applicant courteously submits that the present application validly claims priority and so this document is not applicable, it not having been published before the priority date and there apparently not being any other basis upon which this document would be citable prior art under 35 USC 102.

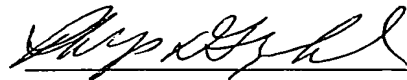
US-A-6037484 was also published after the priority date of the present application, and therefore also does not appear to be citable except perhaps under section 102(e). This reference relates to a method of epoxidising an olefin by contacting it with hydrogen peroxide in the presence of a titanium containing zeolite catalysts and a tertiary amine or amine oxide additive to achieve improved selectivity (column 1 line 54-58).

The '484 patent discloses a wide range of amine and amine oxide compounds (column 5 and column 6) and contemplates the theory that the amine compound must be of such a size as to be able to enter the pores of the zeolite but also is desirably sterically hindered (column 3 line 19-23) so as not to decrease the epoxidation activity of the catalyst unacceptably. It is respectfully submitted that this implies that the amine or amine oxide material is separate from the catalyst system and interacts with the zeolite catalyst by virtue of being in the presence of it.

Moreover, reference is made in '484 to particular tertiary amines in which the nitrogen atom is attached to three carbon atoms (column 5 line 37-39) and then a long list of specific species is provided. In this list, all of the amines appear to be cyclic and indeed, more often than not, aromatic in nature. By virtue of the cyclic structure the skilled person may expect these compounds to provide the desired steric hindrance referred to in column 3 of '484. There is no reference in '484 to amines having alkyl substituents as required in the present invention and amines within the present claims are not cyclic or aromatic in nature. Therefore, the skilled person would be deterred from employing alkyl amines in the face of a clear teaching towards cyclic materials which provide a steric hindrance effect.

In summary, the Applicant submits that the Japanese art is not citable and that '484 does not teach towards the present invention for the reasons given above. As such, it is respectfully submitted that the present invention is patentable, and an early notice of allowance is therefore courteously solicited.

Respectfully submitted,



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